

Nucleic Acids Comprising Regions  
of the Rat PEG-3 Promoter That Display  
Elevated Expression in Human Cancer Cells And Uses Thereof

5

Abstract of the Disclosure

This invention provides for an isolated nucleic acid comprising a PEG-3 promoter comprising the nucleotide sequence beginning with the guanosine (G) at position -270 and ending with the cytosine (C) at position +194 of SEQ ID NO: 1. The invention also provides for a method for identifying an agent which modulates PEG-3 promoter activity in a cell which comprises: (a) contacting the cell with the agent wherein the cell comprises a nucleic acid comprising a PEG-3 promoter operatively linked to a reporter gene; (b) measuring the level of reporter gene expression in the cell; and (c) comparing the expression level measured in step (b) with the reporter gene expression level measured in an identical cell in the absence of the agent, wherein a lower expression level measured in the presence of the agent is indicative of an agent that inhibits PEG-3 promoter activity and wherein a higher expression level measured in the presence of the agent is indicative of an agent that enhances PEG-3 promoter activity, thereby identifying an agent which modulates PEG-3 promoter activity in the cell. The invention provides for a method for treating cancer in a subject which comprises administering a nucleic acid comprising a PEG-3 promoter operatively linked to a gene-of-interest wherein the gene of interest is selectively expressed in cancerous cells in the subject and such expression regulates expression of PEG-3 resulting in growth suppression or death of the cancerous cells, thereby treating cancer in the subject.